REMARKS

Favorable reconsideration of this application in light of the following discussion is respectfully requested.

Claims 39 and 41-77 are presently active in this case. Claims 1-38 and 40 were cancelled by previous amendments. The present Amendment amends independent Claim 39, and adds new Claim 77 without introducing any new matter.

In the outstanding Office Action, Claims 39, 41-42, 49, 52-56, 58, 61, 63 and 65 were rejected under 35 U.S.C. § 102(b) as anticipated by Fay et al. (U.S. Patent No. 4,704,033, hereinafter "Fay"). Claims 39 and 41-76 were also rejected over the reference Richards et al. (U.S. Patent Application Publication No. 2004/0110026, hereinafter "Richards") in view of Clark et al. (European Patent No. 1,229,321, hereinafter "Clark").

Applicants' independent Claim 39 is amended to recite "the environmental effect being made to act on the sample with a known position-dependent intensity distribution to cause a physical property change to the sample." This feature finds non-limiting support in Applicants' disclosure as originally filed, for example in the specification at page 3, lines 10-33. No new matter has been added. Moreover, new dependent Claim 77 is added, reciting features related to the intensity pattern of the environmental effect. These features find non-limiting support in the specification at page 4, lines 3-8. Again, no new matter has been added.

In response to the rejections of Applicants' independent Claim 39 under 35 U.S.C. § 102(b) over the reference Fay, Applicants respectfully request reconsideration of this rejection and traverse the rejection, as discussed next.

Briefly summarizing, Applicants' independent Claim 39 is directed to a method for detecting change of a physically measurable property of a sample due to an environmental effect. The method comprises the steps of (i) subjecting the sample to the environmental

effect for an action time, the environmental effect being made to act on the sample with a known position-dependent intensity distribution, which is based on a pattern function, (ii) detecting transmission, reflection, or scattering of analysis radiation by the sample as a function of position coordinates of the sample and wavelength of the analysis radiation, so as to determine a response function that describes intensity of the transmitted, reflected, or scattered analysis radiation as a function of the position coordinates of the sample and the wavelength; and (iii) determining correlation of the known position-dependent intensity distribution of the environmental effect, or of the pattern function on which this is based, with the response function by correlation analysis, the correlation being a measure of the change of the physically measurable property of the sample due to the environmental effect. In addition, the environmental effect is made to act on the sample through a mask, which has a specific position-dependent transmission function, so as to produce the position-dependent intensity distribution as an image of the mask on the sample.

Turning now to the applied references, Fay is directed to an optical alignment apparatus. (Fay, Abstract.) Fay explains that a wafer 10 and a mask 11 can be vertically and horizontally aligned towards each other, for lithography purposes, by using laser diffraction to generate an alignment signal. (Fay, col. 3, ll. 9-16, col. 4, ll. 22-25, Fig. 4.) For this purpose, Fay focuses a laser beam α_1, α_2 onto a reflection grating located on the wafer 10 by means of a Fresnel zone plate. (Fay, col. 3, ll. 7-10.) The Fresnel zone plate is part of the mask 11. (Fay, col. 3, ll. 1-4.) Fay then detects the diffracted laser beams, and according to the diffraction pattern, performs an alignment of the mask. (Fay, col. 3, ll. 17-37, col. 4, ll. 3-10.) However, Fay fails to teach all the features of Applicants' independent Claim 39. In particular, Fay at least fails to teach:

> (i) subjecting the sample to the environmental effect for an action time, ***the environmental effect*** being made to act on the sample with a known

> position-dependent intensity distribution ***to cause a physical property change to the sample, which is based on a pattern function***
>
> (iii) determining correlation of the known position-dependent intensity distribution of the environmental effect . . . the correlation being a measure of the change of the physically measurable property of the sample due to the environmental effect.

(Claim 39, portions omitted, emphasis added.) In Fay, no sample is subjected to an environmental affect that changes the physical properties of the same sample. To the contrary, in the system that Fay proposes, the diffraction grating located on the wafer 10 necessarily has to provide constant diffraction properties, and therefore, physical properties of the wafer are not changed by the irradiation with the laser beam. Fay also fails to teach that a measure of the change of the physically measurable property of the sample due to the environmental effect is correlated, as required by Applicants' Claim 39, because no such "change of the physically measurable property of the sample" occurs in Fay. Fay's system clearly requires that no physically measurable change of the diffraction grating occurs, because otherwise his system of aligning a mask would not operate correctly, and the precision of alignment would be very poor. (Fay, from col. 1, l. 60, to col. 2, l. 15.) In Fay, only the various orders of the laser light diffracted by the gratings on the wafer 10.

Moreover, Fay also fails to teach "detecting transmission, reflection, or scattering of analysis radiation by the sample as a function of position coordinates of the sample ***and*** wavelength of the analysis radiation," (emphasis added) as further required by Applicants' independent Claim 39. In Fay's method of alignment, the diffraction pattern is not correlated to any position of the wafer, because the only purpose of Fay's system is to determine the alignment of the mask relative to the wafer, and in Fay's system, a correlation of the diffraction pattern that is located on the wafer 10 to the position of the same wafer 10 is not possible. (Fay, Fig. 1.)

Therefore, the applied reference Fay fail to teach every feature recited in Applicants' Claim 39, so that Claim 39 is believed to be patentably distinct over Fay. Accordingly, Applicants respectfully traverse, and request reconsideration of the rejection based on this reference.

In response to the rejections of Applicants' independent Claim 39 under 35 U.S.C. § 103(a) over the combination of the references Richards and Clark, Applicants respectfully request reconsideration of this rejection and traverse the rejection, as discussed next.

The applied reference Richards is directed to an electro-luminescent coating system to produce electroluminescent paintings on surfaces. (Richards, Abstract, Title.) Richards explains that a color providing film layer is applied onto a substrate, then a mid-coating film layer is applied over the color film layer, and subsequently, a clear-coat film layer is applied on top of the mid-coating film layer. (Richards, Abstract, ¶ [0012].) In paragraph [0024] Richards proposes to mask off certain portions of the color-providing film layer, to provide visual effects, such as illuminated designs, shapes, letters, etc. (Richards, ¶ [0024]) However, Richards fails to teach all the features of Applicants' independent Claim 39. In particular, Richards fails to teach:

> subjecting the sample to the environmental effect for an action time, ***the environmental effect*** being made to act on the sample with a known position-dependent intensity distribution ***to cause a physical property change to the sample, which is based on a pattern function***

(Claim 39, portions omitted, emphasis added.) Richards clearly fails to teach that an environmental effect is made to a sample to cause a physical property change to the sample, the environmental effect having a known position-dependent intensity distribution. The pending Office Action asserts that Richards teaches this feature with the application of an electrical current to the sample and the curing of the sample, and points out to Richards' paragraphs [0021] and [0024]. (Office Action, p. 5, ll. 23-27.) However, in these paragraphs,

Richards explains that the AC current at 800Hz is used to excite the EL phosphor in the color-providing film layer to electroluminesce. (Richards, ¶ [0021], ll. 4-10). In addition, Richards explains that the color-providing layers are completely cured so that a masking tape can be applied to this layer. (Richards, ¶ [0024], ll. 12-24.)

But these features of Richards fail to anticipate the elements of Applicants' Claim 39. Claim 39 requires "subjecting the sample to the environmental effect for an action time, the environmental effect being made to act on the sample with a known position-dependent intensity distribution to cause a physical property change to the sample." In Richards, *no* known-position dependent intensity distribution of an environmental effect is applied, and the physical properties of a sample are *not* changed. In Richards, a substrate is merely coated with paint, and the paint can be cured or dried, or can be subjected with AC current radiation to activate illuminescence, as discussed above. But no known-position dependent intensity distribution is applied. The radiation of the paint with the AC current induction of Richards is performed the same way over the surface of the substrate. (Richards, ¶ [0021], Figs. 1A and 1B.)

Moreover, Richards fails to teach the features of step (ii) of Applicants' independent Claim 39. In particular, Richards fails to teach

> detecting transmission, reflection, or scattering of analysis radiation by the sample ***as a function of position coordinates of the sample and wavelength of the analysis radiation***, so as to determine a response function that describes intensity of the transmitted, reflected, or scattered analysis radiation as a function of the position coordinates of the sample and the wavelength

(Claim 39, portions omitted, emphasis added.) In Richards, a simple visual effect of the electroluminescent light is detected, and this detection is by no means as a function of position coordinates. In addition, Richards clearly does not produce a "response function" that describes intensity of the transmitted, reflected, or scattered analysis radiation as a function of the position coordinates.

Moreover, Richards also fails to teach the determination of the correlation of the known position-dependent intensity distribution of the environmental effect, where correlation is a measure of *the change* of the physically measurable property of the sample due to the environmental effect, as further required by independent Claim 39. In Richards, no response function was produced, and no physical change of the sample was made. To perform the correlation of a measure of the change of the physically measurable property, Richards would have at least to measure properties at two different time instances, and Richards does not teach anything related to such measurements.

The reference Clark, used by the pending Office Action to form a 35 U.S.C. 103(a) rejection, fails to remedy the deficiencies of Richards, even if we assume that the combination is proper. Clark is directed to a method for predicting the outdoor durability of coating relative to a set of coatings, where all the coatings have been formed from aqueous coating compositions. (Clark, Abstract.) In Clark's method, the set of coatings are exposed to the same ambient outdoor conditions for the same time period, and the exposed coatings are subjected to a chemiluminescence test, and the results of the chemiluminescence test are compared with each other. (Clark, Abstract, ll. 8-13, ¶ [0027], Claim 1.) Thereby, *the entire sample* is subjected to the environmental effect with the ambient outdoor conditions. Accordingly, Clark fails to teach the features of Applicants' Claim 39 related to steps (i), (ii) and (iii).

Therefore, even if the combination of Richards and Clark is assumed to be proper, the cited passages of the combination fails to teach every element of Applicants' Claim 39. Accordingly, Applicants respectfully traverse, and request reconsideration of this rejection based on these references.

In addition, Applicants respectfully submit that the reference Richards should not be used to form an obviousness rejection, because this reference is non-analogous art towards

Applicants' invention. To form a rejection under 35 U.S.C. § 103(a), theUSPTO must determine what is "analogous prior art" for the purpose of analyzing the obviousness of the subject matter at issue. M.P.E.P. § 2141.01(a). The Supreme Court has held that "[u]nder the correct analysis, any need or problem known ***in the field of endeavor*** at the time of the invention and addressed by the patent [or application at issue] can provide a reason for combining the elements in the manner claimed." *KSR International Co. v. Teleflex Inc.*, 82 USPQ2d 1385, 1397 (2007). Thus a reference in a field different from that of Applicants' endeavor may be reasonably pertinent if it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his or her invention as a whole. M.P.E.P. § 2141.01(a)

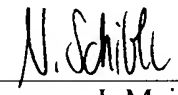
While Applicants' invention is directed to the measurement of physical properties in samples, for example to evaluate change in color of paint after it was exposed to the environmental influences, such as sunlight. (See specification, p. 1, ll. 11-21.) Richards, in contrast, is simply directed to a coating system, to produce electroluminescent effects. (Richards, Abstract), and has nothing to do with measuring the environmental effects that the coating can be subjected to. Therefore, the reference Richards is non-analogous art, in light of the decision *KSR International Co. v. Teleflex Inc.*.

Consequently, in view of the present amendment, no further issues are believed to be outstanding in the present application, and the present application is believed to be in condition for formal Allowance. A Notice of Allowance for Claims 39, and 41-77 is earnestly solicited.

Should the Examiner deem that any further action is necessary to place this application in even better form for allowance, the Examiner is encouraged to contact Applicants' undersigned representative at the below listed telephone number.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Attorney of Record
Registration No. 25,599

Nikolaus P. Schibli, Ph.D.
Registered Patent Agent
Registration No. 56,994

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/07)

GJM/NPS/rct